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# Transportation Energy Management

## Fuel Procurement Strategies and Contract Options

January 1985

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## Fuel Procurement Strategies and Contract Options

January 1985

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# FOREWORD

Energy price increases during the 1970's have caused this part of transit operators' budgets to take on increasing importance. Most recent data, from the 1982 Section 15 report, indicates that operators are now spending 10.6 percent of their operating budgets on fuel and utilities. This level of expenditure clearly points to a need for careful attention. In addition, the decontrol of petroleum offers a number of new options in terms of fuel procurement strategies and supply contract terms to take better advantage of current market conditions.

In response to this situation, the Urban Mass Transportation Administration has developed a number of technical assistance reports in the area of Transportation Energy Management. This report, Fuel Procurement Strategies and Contract Options focuses on ways transit operators can improve the procedures they use to obtain fuel. The report includes a discussion of the changes which have recently occurred in the fuel market and highlights a wide range of possible strategies and related contract terms which can be used to take best advantage of the opportunities presented by current market conditions. The advantages and disadvantages of each possible action are discussed in detail; interrelationships between the actions are covered as well. We believe this report will be useful to any transit operator interested in improving its procurement procedures.

Additional copies of this report, as well as others from this series, are available, while supplies last, from the Office of Technology and Planning Assistance, at the address shown below, upon receipt of a self-addressed label. In addition, reports are available through the National Technical Information Service, Springfield, Virginia 22161. Please refer to UMTA-DC-09-9057-84-1 on your request.

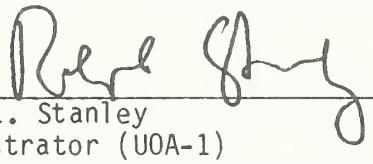

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TABLE OF CONTENTS


| Title | Page |
|---|---|
| **PART ONE: OIL MARKET AND PROCUREMENT OVERVIEW** | |
| **PURPOSE OF STUDY** | 1 |
| **BACKGROUND** | 1 |
| **CURRENT ENVIRONMENT** | 6 |
| **FUEL PROCUREMENT** | 10 |
| **ELEMENTS OF FUEL PROCUREMENT** | 12 |
| **PART TWO: ALTERNATIVE PROCUREMENT STRATEGIES** | |
| **INTRODUCTION** | 16 |
| **SUPPLY RELATED ISSUES AND OPTIONS** | 18 |
| SUPPLY SECURITY | 18 |
| NUMBER OF SUPPLIERS IN THE MARKET | 20 |
| NATURE OF SUPPLIERS | 23 |
| NUMBER OF AWARDS | 26 |
| SPOT PURCHASES | 29 |
| **PRICE RELATED ISSUES AND OPTIONS** | 31 |
| TIMING | 31 |
| STANDARD PRICING APPROACH - PERCENTAGE ESCALATION | 33 |
| PENNY-FOR-PENNY ESCALATION | 36 |
| FIXED PRICE BIDS | 37 |
| PURCHASING COOPERATIVES | 39 |
| PIGGYBACKING | 41 |
| TAKE BULK DELIVERIES AND STORE | 42 |
| **SUMMARY** | 43 |

TABLE OF CONTENTS (CONTINUED)


| TITLE | PAGE |
|---|---|
| PART THREE: SUPPLY CONTRACT OPTIONS | |
| INTRODUCTION | 49 |
| RIGHT OF REFUSAL | 50 |
| RIGHT TO PURCHASE FUEL OUTSIDE OF CONTRACT | 52 |
| MOST FAVORED NATION CLAUSE OR PREFERRED CUSTOMER CLAUSE | 53 |
| PRIORITY CUSTOMER CLAUSE | 55 |
| PRICE ESCALATION CLAUSE | 56 |
| PUBLISHED PRICE SOURCE SELECTION | 58 |
| HEDGE CERTIFICATION | 60 |
| VENDOR QUALIFICATION CLAUSE | 61 |
| RIGHT TO INSPECT FUEL | 63 |
| SUMMARY | 65 |
| CONCLUSION | 68 |

LIST OF EXHIBITS


| EXHIBIT NUMBER | TITLE | PAGE |
|---|---|---|
| I | # 1 DIESEL PRICES ..... | 4 |
| II | PETROLEUM IMPORTS BY SOURCE ..... | 9 |
| III | REFINER WITHDRAWALS ..... | 22 |
| IV | FREE WORLD OIL PRICE PROJECTIONS ..... | 35 |
| V | LINKING STRATEGY OPTIONS TO OBJECTIVES. ..... | 47 |
| VI | DETAILED REQUIREMENTS FOR DIESEL FUEL OILS ..... | 64 |
| VII | LINKING CONTRACT OPTIONS TO STRETERGY OPTIONS ..... | 66 |

# PART ONE
# OIL MARKET AND PROCUREMENT OVERVIEW

## PURPOSE OF STUDY

The purpose of this study is to examine alternative fuel procurement strategies and contract options by which mass transit bus systems can purchase fuel at the lowest price possible and enhance fuel security given current energy market conditions.

This study is based on the premise that fuel procurement methods as practiced by many transit properties today are hold-overs from an energy market environment that no longer exists. Therefore, fuel procurement practices currently in use do not necessarily result in the most favorable price and supply arrangement for the mass transit system.

It is recognized that some transit properties, primarily the larger systems, have been very resourceful in examining new and/or different methods for procuring diesel fuel. They have taken the initiative and have determined for themselves the optimal fuel procurement methods in today's energy environment. However, there are many transit systems that have not been able to devote the necessary manhours, time, and funds to examining alternative fuel procurement methods. This study was undertaken to assist these transit systems.

## BACKGROUND

Most transit properties have traditionally procured diesel fuel through a competitive bid procedure in which diesel suppliers offer to deliver a fixed volume of fuel over a specified time period for a price which escalates according to some posted price. The award is made to the bidder offering a combination of the lowest base price and lowest escalation rates. A survey

undertaken by the American Public Transportation Association (APTA) in 1981 revealed that 111 of 147 transit bus systems (75 percent) procured diesel fuel in this manner. This APTA survey revealed other important information on the nature of fuel procurement by transit properties. First, the typical supplier of diesel fuel was a refiner (i.e., about 62 percent of the systems which responded identified their supplier as a refiner). Second, only 33 percent of the systems had supply contracts which included any type of supply guarantee. Third, the fuel storage capacity of the transit system necessitated multiple deliveries by the supplier. Only 33 percent of the systems had storage capacity equivalent to three or more weeks' worth of fuel. In fact, 25 percent of the systems had storage capacity for one week's or less worth of fuel.

Though defining the characteristics of a "typical" procurement method is always subject to exceptions, it is safe to say that, in general, transit properties have viewed the competitive bid procedure as the most attractive method for procuring fuel. Its attractiveness lies in the fact that it requires a minimum of time and effort on the part of transit management to develop the request for bids. It makes the selection of a supplier less subject to criticism in that the low price is given the award. Little time needs to be spent monitoring performance on the contract since a single supplier will be delivering a predetermined volume of diesel at regular intervals. In short, the competitive bid method makes fuel procurement a routine or mechanical process.

For several years there were other factors that reinforced the use of the competitive bid method for fuel procurement. Purchasing agents saw diesel prices skyrocket through the 1970s. In 1970, No. 1 diesel was averaging 12 cents per gallon. In 1974, the average price jumped to 37 cents per gallon. Prices were relatively stable from late 1974 through the middle of 1978 when panic buying in the world crude oil market in the wake of the Iranian

revolution drove prices up beyond any level ever imagined by either consumers or diesel marketers. By the first quarter of 1981, U.S. transit systems were paying an average of $1.11 per gallon for No. 1 diesel (see Exhibit I). In nominal terms, the amount of money allocated to fuel procurement was about 300 percent greater in 1980 than in 1974. In terms of percent of total outlays, fuel purchases accounted for seven to ten percent in 1980 as opposed to two to three percent in 1973.

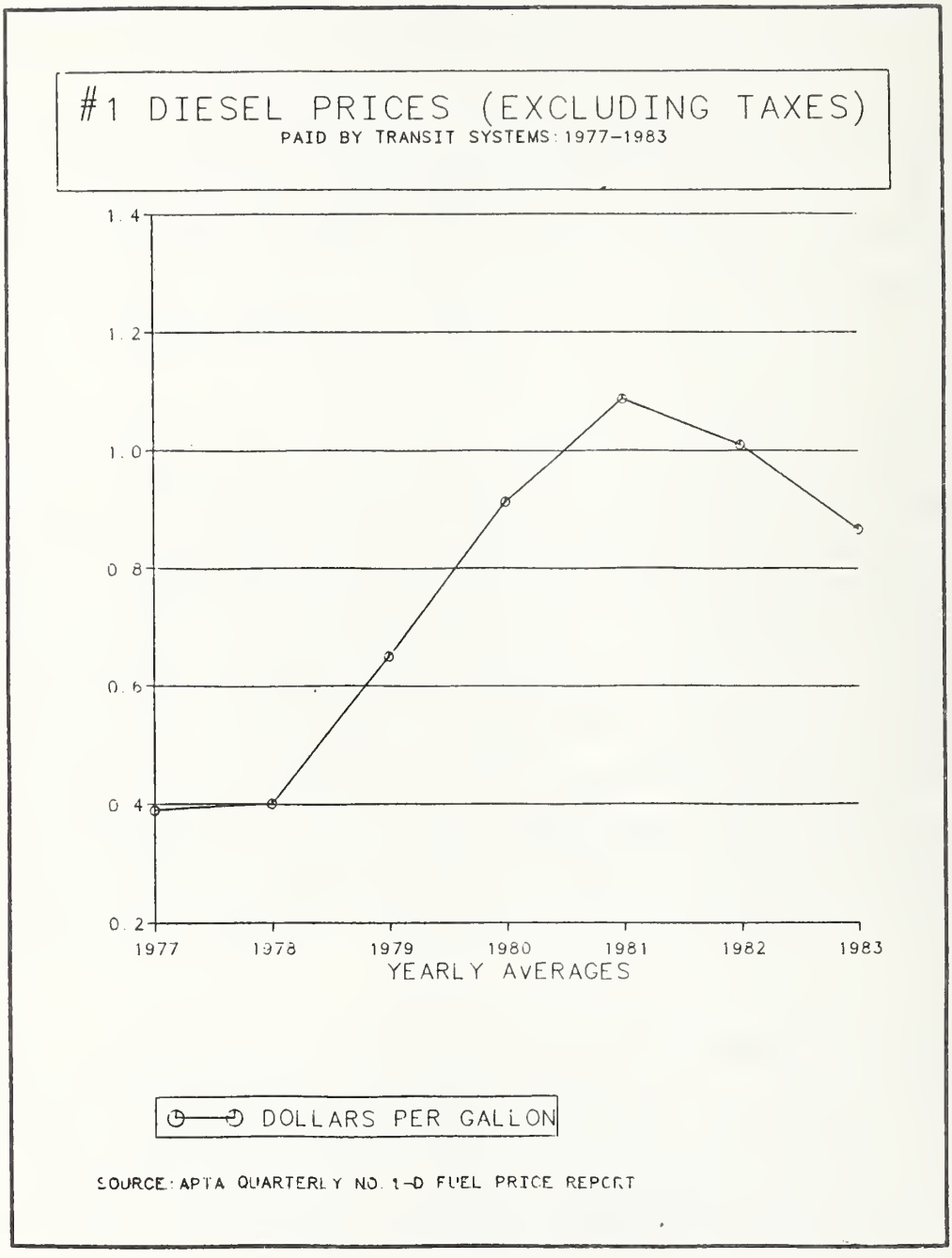
The rising diesel prices were the result of a tight supply situation which characterized the oil market from late 1973 to 1981. The tight supply situation made the oil market a seller's market. Bulk purchasers of fuel were in the position of having to take whatever supplies they could obtain at the best price quoted by the seller. In short, the buyer had to dance to the seller's tune.

However, during the period of tight supply, transit properties were aided in their search for diesel supplies by the federal regulations that were in place from 1974 to January 1981. Transit properties were designated priority end-users and were, therefore, entitled to receive 100 percent of the volume of diesel fuel consumed in a DOE defined historic base period. Transit managers could also apply for allotments of diesel fuel under the state set-aside program. Transit properties were further assisted by Special Rule No. 9 promulgated in 1979 which mandated that suppliers had to deliver 100 percent of transit systems' "requirements"--which were determined by transit operators themselves.

These regulations mitigated the problem of obtaining supplies in the tight market. However, they did not mitigate the strain on the budgets of transit systems resulting from spiraling prices. After being hit with ever increasing prices, the question being asked by procurement officers was not "will prices go up", but rather, "when will prices go up and by how much". After seeing

Exhibit I

#1 Diesel Prices



diesel prices go from 33¢ per gallon to $1.11 per gallon, it is little wonder that a primary concern in fuel procurement continues to be price.

The tight supply situation coupled with spiraling prices plus the many price and allocation controls had yet another impact on the procurement practices of transit systems. This impact was the development of "historical" or "traditional" relationships between transit systems and suppliers. Such "historical" relationships evolved when the buyer decided (or was convinced by the supplier) that the transit system could improve its chances of obtaining diesel supplies in the volumes required and/or obtain the lowest possible prices if the buyer agreed to renew its contract with the current supplier. The thinking was, why go into the marketplace and arrange a supply deal with an unknown entity if the property already had a supplier which had proved itself to be a reliable source of diesel fuel? Establishing an historical relationship and obtaining a preferred customer status meant that the property might be able to procure diesel supplies over the amount determined by the base period and at a "discount" price.

In addition to relying on a traditional supplier, transit systems came to rely on state and local officials as well as the federal government. Reliance on government officials was a consequence of the energy regulations which worked in favor of transit properties. If a jobber (i.e., an independent diesel distributor) or refiner needed to be prodded into making deliveries, or if prices appeared to be out of line, the person to call was not the jobber or refiner but the individual in the state energy office or in the Energy Regulatory Administration of the federal Department of Energy who would listen to the problem with a sympathetic ear and then make the appropriate calls to the supplier or order a delivery of state set-aside diesel fuel.

In summary, a common reaction to an energy environment characterized

by tight supply, ever increasing prices, allocation fractions, base periods, entitlements, surcharges, daisey-chaining, and a host of oil industry esoteric procedures was to attempt to stay as far removed from the oil market as possible while obtaining the needed diesel fuel. This distance was generally accomplished either by relying on a traditional supplier to take on a somewhat paternalistic role or by requesting sealed bids and selecting the lowest bidder. Any problem encountered in acquiring the needed fuel resulted in calls to state and federal energy officials and requests for their intervention.

**CURRENT ENVIRONMENT**

The energy environment, particularly the oil market, has changed radically in the early years of the 1980's. Several factors combined to cause the oil market to go from tight supply to over supply--from spiraling prices to falling prices--from a seller's market to a buyer's market. Such factors included: OPEC overplayed its hand and set its official prices on the basis of temporary panic buying. The unprecedented high OPEC prices led to fuel switching and conservation--in essence--diminished demand worldwide. At the same time, the major oil consuming nations were entering a severe recession which further reduced demand for oil. Domestically, President Reagan decontrolled the oil industry eight months earlier than called for under existing laws. The domestic oil industry took decontrol as a green light for higher prices, greater drilling, and greater production.

These factors resulted in an over supply of crude oil and refined products. The petroleum industry went literally from boom to bust within an 18-month period. Manufacturers of drilling equipment went from having two years' worth of back-logged orders in 1979 to watching undelivered equipment literally rust at loading docks. A good indicator of the state of the oil industry has traditionally been the number of active drilling rigs. The figures below illustrate the abrupt turn-around in the oil industry in early 1982.

ESTIMATED NUMBER OF ACTIVE RIGS

| Dec 78 | Dec 79 | Dec 80 | Dec 81 | Jun 82 | Sep 82 | Dec 82 | Mar 83 |
|---|---|---|---|---|---|---|---|
| 2,219 | 2,506 | 3,337 | 4,530 | 2,908 | 2,429 | 2,768 | 1,956 |

Refinery utilization, another indicator of the state of the oil industry, dropped from around 85 percent in 1979 to about 68 percent in the first half of 1983. Over 75 refiners have gone out of business within the last two years. Houston, the city that lives on the strength of the oil industry and was the fastest growing city in the country in 1980 has seen its expansion come to a dead halt. The vacancy rate in new office space in Houston reached over 30 percent in the first half of 1983.

In the midst of over supply and falling prices, OPEC experienced internal strains with member countries undercutting one another's prices. Compounding the economic problems of OPEC nations was the political dissention among member countries resulting from the Iran-Iraq war. In a last ditch effort to keep the organization together, representatives of OPEC countries met in January 1983. They reached an agreement in which OPEC as a whole cut its production ceiling by 700,000 barrels a day with each country being assigned a lower production ceiling, The official OPEC benchmark price was dropped from $34.00 per barrel to $28.00 per barrel.

At the same time, OPEC was seeing its prices slip downwards, it was also being displaced as the primary source of crude oil for the United States. Throughout the 1970s, the U.S. was dependent on foreign imported oil to satisfy about 33 percent of its needs. The major sources of foreign imported crude oil were Arab countries bordering the Persian Gulf--primarily, Saudi Arabia, Iran, and Kuwait. In 1979, the U.S. was consuming about 18 million barrels of crude a day of which over three million were imported from the Arab countries. By the middle of 1983, U.S. consumption had dropped to about 15 million barrels a day of which less than a half a million came from Arab countries. Saudi Arabia had dropped from the largest source of imported oil to number seven as shown below.

PERCENTAGE OF TOTAL U.S. PETROLEUM IMPORTS
BY COUNTRY OF ORIGIN

(First Half of 1983)

| | |
|---|---|
| Mexico | 18% |
| Canada | 11% |
| Venezuela | 10% |
| United Kingdom | 8% |
| Nigeria | 6% |
| Indonesia | 6% |
| Saudi Arabia | 4% |

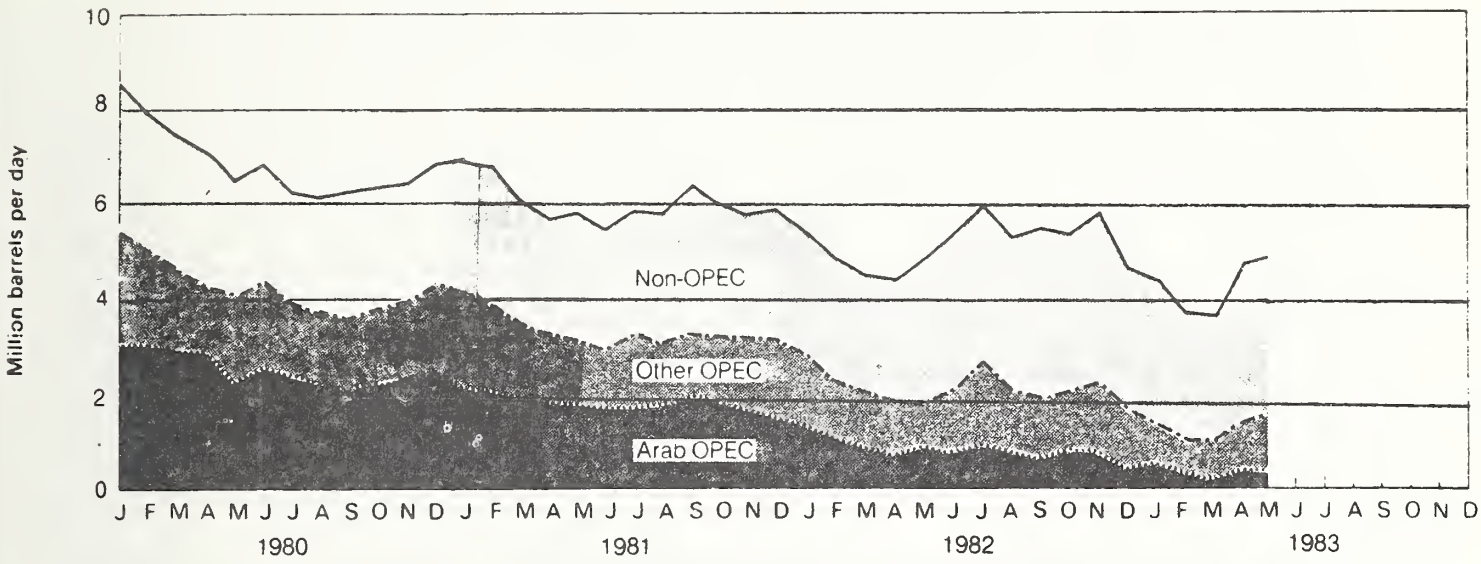
Remaining 37 percent comes from 39 other countries

Source: Department of Energy

The decline in U.S. dependence on Arab oil over the last few years is illustrated in Exhibit II.

Exhibit II

Petroleum Imports by Source


Million barrels per day
10
8
6
4
2
0
Non-OPEC
Other OPEC
Arab OPEC
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D
1980
1981
1982
1983

The oversupply of oil, the downward trend in prices, the shift in import patterns, and decontrol of oil all had a direct impact on the manner in which a bulk end-user of petroleum such as a transit property can and should negotiate supply agreements. This is not to say that the conditions that exist today are any more permanent than the conditions that existed in the 1970s. Prices could turn around and, in fact, prices appear to have stabilized. OPEC's production ceiling agreement seems to be holding and the industrial countries' coming out of the recession will result in greater demand for energy. Finally, there is always the risk of another supply disruption stemming from a political and/or military confrontation in the Middle East such as the Iran-Iraq war, and even though the U.S. is not dependent on Middle East oil, U.S. allies in the International Energy Agency are still dependent on the Middle East for about 40 percent of their petroleum.

Yet, the fact remains that the transit property no longer faces the conditions that once existed and which dictated the way by which diesel fuel could best be procured. A new set of conditions

in the oil market exists and these conditions should be reflected in the procurement methods practiced by transit properties. The remainder of this study identifies and examines alternative procurement practices available to transit properties in light of the current oil market conditions.

## FUEL PROCUREMENT

Procurement officers of transit properties are responsible for purchasing all materials and services required for the operation and maintenance of the transit system. Diesel fuel is but one of many items procured and by no means represents the greatest budget outlay. Fuel costs for motor bus systems on average account for only about nine percent of total expenditures. Yet, fuel as a commodity has some features which make it unique among the many items procured by transit systems.

First and foremost, fuel is a "political" commodity. That is, because availability and cost of fuel directly affects all Americans, fuel itself has political implications. If there is a shortage of fuel and fuel prices increase sharply, elected officials at the local, state and national levels feel pressure to do something (the best example of the result of this pressure was the rapid passage of the Emergency Petroleum Allocation Act into law in 1974). Because fuel is perceived as a political as well as an economic commodity, transit procurement officials can assume that the price paid by the property and supply arrangements negotiated with the supplier could at any time become the subject of public scrutiny and public debate.

A second characteristic of diesel fuel that must be considered in the procurement process is that transit systems are not the only consumers of diesel fuel or--more precisely--motor bus operation is not the only end use of diesel fuel for which fuel substitution is not feasible. The trucking industry is dependent on diesel

fuel as is a high proportion of the nation's railroads. In addition, a high percentage of agricultural equipment uses diesel fuel.

The non-substitutability of diesel fuel by all these end-users means that the fuel procurement process of a transit property must permit the property to compete successfully for fuel on the open market both under normal market conditions and in the event of a temporary or protracted tight supply situation. The need to have a fuel procurement process by which a transit property can effectively compete in the open market is underscored by the absence of any federal or state regulations which can guarantee the delivery of diesel supplies to transit properties in an energy emergency.[1]

A third factor that makes diesel fuel a unique procurement item is that diesel fuel and lubricants are the only non-manufactured items purchased by a transit property. All other goods are manufactured. The significance of this factor for the property rests in the greater price volatility of fuel relative to other goods purchased. By definition, a manufactured good is a combination of raw resources processed into a finished product. It is highly unlikely that all resources going into the making of a particular finished product are subject to the same economic forces. Consequently, price movements of a manufactured product will be smaller on a percentage basis than the price movements of diesel fuel and lubricants. It is important that the procurement process

---

[1]As of mid-1982, approximately 30 states had developed energy emergency stand-by laws many of which include provisions for facilitating delivery of fuel to priority end-users--mass transit systems included. However, in the absence of any federal regulations, it is quite possible that petroleum suppliers would choose to withdraw from a market rather than be subject to the dictates of a particular state government. Even if a supplier remains in a particular state, no state law can force a supplier to increase deliveries into the state. State laws can only direct the allocation of fuel already in the state. Because the petroluem distribution system is a highly integrated interstate network, each state has only marginal control over the quantity of supply ultimately available to the consumer within its borders.

recognize the greater price volatility of diesel fuel relative to other purchased items and that the contractual arrangement take into account both price increases and decreases.

In summary, it can be said that diesel fuel is unique among the many items purchased by mass transit properties. It is a high exposure commodity the availability and price of which may at any time become the topic of public debate. It is a commodity consumed by other end-users of a high priority nature in terms of social benefit. It is a commodity for which their are no substitutes. And finally, it is a commodity that is subject to greater price volatility than other items purchased by the property. To insure maximum effectiveness, procurement methods must be developed on the basis of and not in spite of these characteristics.

**ELEMENTS OF FUEL PROCUREMENT**

When considering modifications to fuel procurement practices it is helpful to divide fuel procurement into four distinct categories: strategy, procedures, regulations, and the contract. Procurement strategy is the overall approach or plan for purchasing diesel fuel. Procurement procedures are the steps which need to be taken to implement a particular strategy. Procurement regulations are rules established to insure that the selected procedures are followed. Finally, the procurement contract is the legal vehicle by which the transit system and the diesel fuel supplier set down the exact terms of the supply transaction. Moreover, the contract is ultimately the legal embodiment of the selected strategy and as such should reflect the basic objectives and priorities of the transit property.

Of the four procurement elements, the most basic and hence the most important element is strategy. The procurement strategy determines how a property is going to attempt to obtain fuel (or anything else for that matter) at the best possible price

and with adequate safeguards against interrupted delivery. It is during the development of a strategy when the transit operator is forced to address fundamental questions and set priorities. For example, decisions need to be made on such questions as:

- Is low price our primary objective?
- Are we willing to pay a premium for preferential treatment by the supplier?
- Do we want only one supplier or should we have several?
- Are we willing to pay a higher price per gallon to cover the cost of frequent deliveries or should we invest in expanded storage capacity?
- Are we more interested in taking advantage of a drop in posted prices or in protecting ourselves against rise in prices?
- How important is it to be able to predict with certainty, the cost of fuel over the upcoming year?

By answering these and other questions, management will be piecing together a procurement strategy; the "what" and "how" of fuel procurement will be decided. The strategy development process necessitates analysis of the oil market, for the strategy to be adopted must not only reflect the objectives of the property but it must also reflect the existing market conditions. It must ultimately result in acceptable offers by suppliers. It should rest on whether prices are expected to rise, fall, or remain stable, the number of suppliers operating in a defined area, the probability for some kind of supply disruption or tight supply situation, and so on. This assessment is crucial to insuring that the adopted strategy maximizes the ability to take advantage of favorable market trends and minimizes exposure to adverse market trends or events.

In the final analysis, the extent to which the desired strategy is effectively implemented will be determined by the content of the supply contract. The contract should reflect the property's requirements in terms of volumes, delivery sites, and frequency

of delivery. The contract should also reflect the property's priorities in terms of price vs. security as well as the property's oil market expectations. And finally, the contract is the legal instrument by which the property can maintain sufficient flexibility enabling it to respond to varying trends in the oil market during the life of the contract.

It may be said that a transit system's procurement strategy and its contract are the key elements in obtaining the optimal deal for the acquisition of diesel fuel. Hence, this study will focus on alternative strategies and specific contractual arrangements that are worth consideration.

The other two components (e.g., procedures and regulations) in the procurement process should not be overlooked in reviewing the procurement process. Procurement procedures and regulations can either facilitate or prohibit the desired strategy from resulting in the type of purchase arrangement envisioned. For example, a strategy objective could be to insure against the property being affected by a price increase outside its area. Procurement procedures could then be established to include a review by the purchasing manager of alternative oil industry posted price sources in order to determine the source which best correlates to prices in the local market area. Procurement regulations might then require this type of investigation and a brief report stating the findings. This procedure coupled with the regulation would institutionalize a step which over time would insure that the transit system did not suffer from a price increase which was, in reality, not relevant to the conditions in its local market.

Conversely, procedures and regulations can hinder a system from instituting a strategy judged to have the greatest potential for saving money. For example, regulations of some transit properties prohibit the submission of fixed price bids by suppliers. Only submissions which offer a base price with an escalation rate will

be considered. The reasoning behind this regulation is that a fixed price bid might look attractive from the standpoint of projecting costs, but it is assumed that the supplier had to build into the fixed price some allowance for increased costs to himself. Therefore, the transit system is paying a premium for the fixed price--a premium which might turn out to be a waste if prices do not increase during the life of the contract. (If the supplier offers a fixed price without allowing for an increase in costs to himself, this in itself shows a lack of sound business sense and is a good reason not to enter into a business relationship with him.)

This thinking and, thus, the regulation might have been appropriate in the past. However, with the advent of a viable petroleum futures market, a fixed price bid protected by a hedge in the futures market makes the need for a premium obsolete. The concern and the regulation are no longer in keeping with the oil market and continuation of the regulation prohibits the property from taking advantage of an option that could yield financial benefits.

These examples illustrate how procedures and regulations can work to benefit or harm the interests of the transit property. Yet the fact remains that it is the procurement strategy that should drive the procedures and regulations and not vice versa. The strategy to be adopted should first be decided. Procedures are then established to translate the strategy into a procurement plan. Regulations are established to insure that the prescribed procedures are followed. These three elements combine to result in a contract which embodies the priorities and objectives of the transit system regarding diesel fuel acquisition.

## PART TWO
## ALTERNATIVE PROCUREMENT STRATEGIES

### INTRODUCTION

Development of a procurement strategy by each transit property was largely unnecessary in the days of petroleum price and allocation controls. To the extent that there was a strategy, it largely consisted of management's decision to take advantage of the transit system's designation as a priority end-user. Decontrol of the oil market plus radical changes in the supply/demand balance has led to new risks and new opportunities for transit systems regarding diesel procurement. A coherent strategy is now needed to minimize the risks inherent in the new environment and to take full advantage of the opportunities presented.

A coherent procurement strategy is also useful from an internal management perspective. A strategy which delineates objectives, priorities, and a process facilitates assignment of organizational responsibilities and monitoring of the procurement effort. It also facilitates effective allocation of resources in terms of personnel and time. In short, a well defined procurement strategy is the first step in effective management of fuel procurement as a whole.

A sound procurement strategy is also important in helping a transit property to translate its importance in the market as a bulk end-user, i.e., its market power, into a favorable contract. The transportation sector accounts for approximately 45 percent of total middle distillate consumption in the United States.[2]

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[2]Middle distillates include: No. 1 diesel fuel, No. 1 heating fuel, No. 2 diesel fuel, No. 2 heating fuel, and No. 4 fuel oil. Consumption by end use sector is: transportation, 45 percent; industry, 21 percent; residential, 21 percent; agricultural/commercial, 10 percent; electric utilities, 3 percent.

There are no other end-users which purchase the quantity of diesel fuel that mass transit systems do. Such bulk purchases give transit properties potential power in the marketplace. Development of an effective procurement strategy will permit the transit property to turn this potential market power into real market power. Market power is the ability of a buyer or a seller to influence not only the terms of its arrangements but also the terms of arrangements between other parties within the same market.

The examination of strategy issues and options is divided into two categories as shown below:

SUPPLY RELATED ISSUES AND OPTIONS

- Supply Security
- Number of Suppliers in the Market
- Nature of Suppliers
- Number of Awards
- Spot Purchases

PRICE RELATED ISSUES AND OPTIONS

- Timing
- Standard Pricing Approach - Percentage Escalation
- Penny-For-Penny Escalation
- Fixed Price Bids
- Purchasing Cooperatives
- Piggybacking
- Taking Bulk Deliveries and Storing

Division of the issues and options into these two categories is primarily to facilitate effective examination of each item by transit operators. The fact remains that several of the items relate to both supply and price because each can be a function of the other. That is, a supply option might be examined on the basis of the price per gallon the property might pay and a price option might be evaluated on the basis of how attractive the supply arrangement might be. Be that as it may, the costs and benefits of the issues and options presented in each category

are identified. It is left to the transit operator to determine which is most appropriate in his particular situation. It should be understood that many of the issues and options are complimentary; that is, they are not mutually exclusive and could be combined in a single fuel purchasing strategy.

## SUPPLY RELATED ISSUES AND OPTIONS

### SUPPLY SECURITY

A fundamental question that must be addressed early in the strategy development process is how much importance is attached to supply security. Obviously, all transit systems want to be assured that the supply contracted for will be delivered. However, there are steps that can be taken to enhance supply security or, more accurately, to reduce the risk that for one reason or another diesel fuel deliveries will be interrupted or will be smaller in quantity than required. Every supply contract includes a **force majeure** clause which stipulates that, under certain conditions, the seller is relieved from his legal obligations to deliver fuel. This **force majeure** clause reflects the recognition by the seller that he can not forsee all contingencies, some of which might prevent him from satisfying his obligations. This same recognition must be made by the purchaser. A supply contract is a vehicle for acquiring fuel under certain conditions. If these conditions do not exist, the contract will not and cannot get diesel fuel into the property's tanks.

This being the case, certain measures may be considered which will, in effect, narrow the conditions under which fuel delivery might be interrupted. However, these measures (to be addressed later in this report) all have a cost. Consequently, transit managers must determine how much they are willing to pay in order to enhance the security of their supply. The answer to this question is dependent on the relative priority of security among other factors such as price and service and reliability.

It would be erroneous to perceive security as a singular commodity which could be had for a specific price. Fuel security is or should be one aspect of several procurement questions. For example, the importance attached to security should influence the type of supplier with whom a contract is signed, the number of suppliers with whom deals are negotiated, the use of alternative sources or supply outside the long term contract and the storage capacity owned and/or leased by the transit property. In short, security, because of its pervasiveness throughout various procurement issues, needs to be addressed and put in proper perspective early in the development of the procurement strategy.

Determining the importance of security and thus the price the property is willing to pay for security will revolve around what is anticipated in the petroleum market over the next year. If product availability is expected to remain constant or expand, if demand is expected to remain constant or diminish, and, thus, if prices are expected to remain relatively constant or go down, then supply security need not weigh heavily in the procurement strategy. This is not to say that security is ignored, but rather that the price the property would be willing to pay for security is not great.

On the other hand, if supply availability is unpredictable or is expected to diminish relative to demand, causing prices to fluctuate or rise steadily, then security becomes a more valuable asset for which the property would be willing to pay a higher price.

When analyzing the supply/demand balance both the international and domestic markets must be examined. This is because even though the United States is now much less dependent on foreign oil than it was in the 1970s, termination of price controls made U.S. prices more susceptible to foreign price jolts. For example, even though the United States is dependent on Persian Gulf countries for less than five percent of its total requirements,

the closing of the Strait of Hormuz as a result of the Iran/Iraq war, could cause U.S. domestic prices to rise sharply. This is because U.S. Western European allies and Japan are still heavily dependent on Persian Gulf oil. About 40 percent of their oil comes from Persian Gulf countries. The loss of this oil to Western Europe and Japan would have a ripple effect in the international oil market affecting the distribution of oil among major consuming nations. This ripple effect could result in oil being diverted from the United States. U.S. domestic prices would reflect this foreign demand for U.S. oil.

Determining the importance of security must also take into account regional and local factors. For example, in examining the supply/demand balance in the local market one should determine the chances of a competing end-user attempting to acquire a greater share of supply to meet some need that may not even have a direct impact on transit properties. For instance, early cold weather could lead farmers to accelerate harvesting and thus require greater volumes of diesel fuel. On the supply side, such problems as frozen rivers and snow clogged streets, could arise to disrupt receipt of diesel fuel.

In short, a sound fuel procurement strategy requires an assessment of potential problems which could adversely affect supply availability and prices. Based on this assessment, transit managers can determine the importance of procurement features which offer some measure of insurance. The importance of such features will, in turn, indicate a reasonable cost for the insurance.

NUMBER OF SUPPLIERS IN THE MARKET

During the days of price and allocation controls, the number of refined product marketers mushroomed. Conversly, decontrolled and declining prices forced thousands of jobbers and over a hundred refiners out of business. For the most part, the firms that failed would not have been established if the controls had

not provided them with a niche in the marketplace. From the point of view of the transit property, the loss of these marketers is of little or no consequence with one exception, those areas where business failures and market withdrawals left only one or two suppliers servicing the area. In these cases, the purchaser could suffer from a lack of competition between sellers.

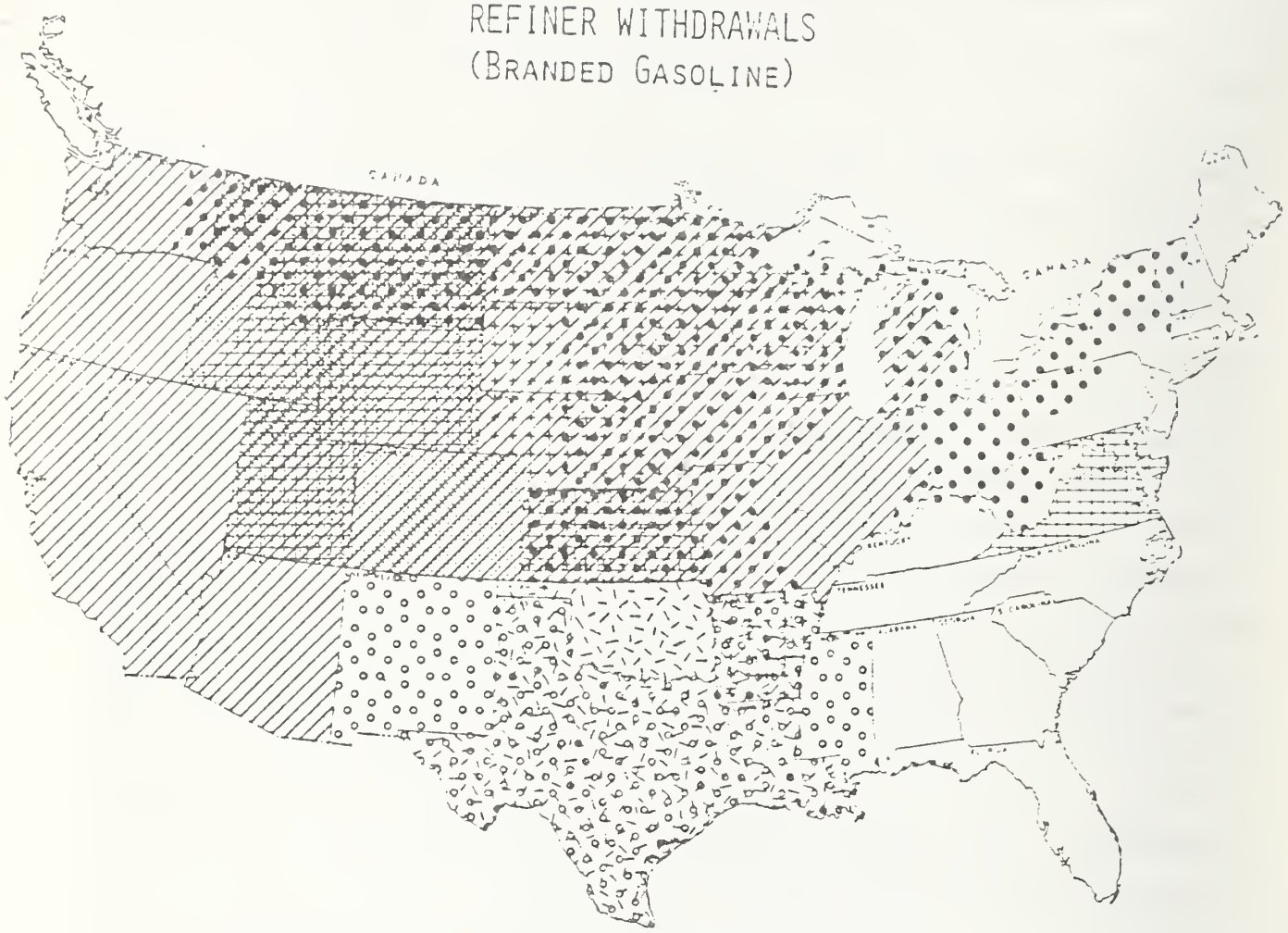
Decontrol led major and independent refiners to rethink their marketing strategies. Whereas in the past, refiners prided themselves on marketing their products in all or most of the 50 states, the new thinking concluded that this strategy, though good for the corporate ego, was bad for profitability. In many cases, refiners determined that they could improve their profitability if they withdrew from markets which were yielding marginal profits and concentrated on expanding their share of those markets in which they were already a major supplier and earning a healthy return. For example, Gulf Oil, which is traditionally among the top five refiners in distillate fuel sales nationwide, withdrew from all Pacific coast states, all Rocky Mountain states, most Great Plains states, and all Midwest states. Mobil, Texaco, and Sunoco were other major refiners which also withdrew from numerous states. Independent refiners such as Union 76 and Getty/Skelly took similar moves. The states from which these refiners withdrew are identified in Exhibit III.

The unusually high number of refiners which withdrew from certain markets in 1981 was an immediate result of decontrol. However, withdrawal by refiners and other suppliers is a common occurrence in the oil industry and goes on continually.

Such shifts have little or no impact on the procurement of diesel fuel by transit properties servicing large cities and other densely populated regions where there are numerous suppliers.

Exhibit III

# REFINER WITHDRAWALS
## (BRANDED GASOLINE)




See code key to ascertain which refiners have announced market withdrawals in each state. Several states (with overlapping codes) are subject to a withdrawal by more than one refiner.

GULF

MOBIL (Regional consolidation into urban areas)

GETTY/SKELLY

SUNOCO

UNION 76

MOBIL

TEXACO

However, transit properties that service medium or small cities and less densely populated areas in which there are few suppliers could be severely effected by the withdrawal of a single diesel supplier. His withdrawal could leave only one or two sellers in the market. With so few sellers in a given market, there is not the degree of competition which would encourage the sellers to offer potential customers special inducements. In fact, in markets where there are only two or three sellers, it is relatively easy for the sellers to reach a tacit understanding on volumes to be sold by each and prices to be charged. Faced with such a situtation, the transit property may have a difficult time obtaining any sort of special consideration such as discounts or preferred customer status. Moreover, with only a couple of sellers in a market, the consequences stemming from the property's supplier going out of business are magnified. This is because there is no guarantee that the remaining seller or sellers will have the capacity to take on the requirements of the transit property.

Transit operators cannot control or even influence the exits and entries into their market. However, it is incumbent upon the transit operator to monitor changes among the oil marketers. Understanding who is in the market and who may be leaving or entering the market will put the transit system in the position of being able to take advantage of any supply or price opportunity and avoid the risk of being caught without adequate suppliers.

NATURE OF SUPPLIERS

In addition to the number of suppliers servicing a given market, the nature of the suppliers is a factor that needs to be considered. Not all marketers of petroleum products are equal. They vary according to types of physical facilities, capacity of facilities, location or storage and transportation facilities vis-a-vis the property, control over their supply up stream (i.e., crude supply and refining operations), and their performance record.

From the standpoint of the buyer, marketers can be divided into two categories: refiners and jobbers. Refiners generally distribute their refined products through branded or unbranded jobbers. However, in the case of bulk end-users such as mass transit systems, refiners will often sell directly to the end-user. As mentioned in the introduction, the APTA survey found that more than half the properties surveyed had contracts with refiners.

Traditionally, transit properties have felt more secure by having contracts with refiners than with other refined product marketers for several reasons. First, by selling directly to the end user, the product is not subject to a mark-up by a middleman, that is, a jobber. Second, a refiner controls his own product slate--the relative proportions of products refined from a single barrel of crude oil. This control provides the refiners with an ability to concentrate on the production of any product--such as diesel fuel--in strong demand. Third, a major refiner or a large independent refiner is likely to have some royalty oil--that is, oil pumped from fields they own or lease. Access to royalty oil may enhance the security of crude availability and thus provide a buffer in any crude supply shortfall. Fourth, it is unlikely that a major refiner or a large independent will go out of business leaving the property with a contract but no diesel fuel.

Though these reasons are not entirely without merit, there are factors that reduce the significance of these alleged advantages. First, it is doubtful that a refiner is located in proximity to a given operator's service area; consequently, the operator would have to pay for the transport of product from the refinery gate to its tanks. Second, with the end of the entitlement program which forced refiners with crude oil to sell a portion of their crude to refiners without crude, there is no guarantee that a refiner will have access to crude oil in a supply disruption. Even in the case of royalty oil, if this royalty oil is produced in foreign fields, it is not immune to politically motivated

disruptions by host governments. Third, though it is unlikely that a medium or large refiner will go out of business, it is possible that the refiner will find it necessary or simply economically preferable to withdraw from a particular market. It is doubtful that withdrawal would be undertaken before the expiration of a contract, however, withdrawal would mean the end to any relationship built up between the two entities.

An alternative to refiners is jobbers. The petroleum product jobber, be he branded or nonbranded, buys the product "off the rack" (i.e., at a wholesale terminal) under contract with refiners or on a spot basis and resells the product to either retailers or directly to end-users. Over the last several years an increasing number of oil jobbers have moved "downstream" into the retail market. Thus, a jobber is not necessarily simply a wholesaler, but he may be a wholesaler and retailer.

There are advantages to buying from a jobber. First, most jobbers have supply contracts with several refiners. This means that the jobber has the flexibility to shift from one refiner to another in the event that a particular refiner experiences a supply problem or raises its prices. Second, it is likely that there are several jobbers in proximity to an operator's service area. This factor holds two benefits: (1) transportation costs are minimal and (2) the jobber as a local businessman has a great interest in maintaining his competitiveness in the local market and in maintaining a good reputation in the community. It is unlikely that a jobber would withdraw from a market because, in most instances, there is nowhere else for him to go. Third, there is something to be said for working with a smaller firm in terms of ease of access to the key individuals.

The major disadvantage in depending on jobber(s) for supply is that as resellers, that is middlemen, in the product distribution chain, jobbers are susceptible to price squeezes which in turn can lead to bankruptcies or significant boosts in prices to

their customers. Jobbers have no control over the flow and use of crude oil or the flow and distribution of refined products from the refinery gate. Thus, his ability to maintain service at desirable prices in a market experiencing supply problems is to a large degree out of his control. It must be noted, however, that an experienced jobber, being well aware of his situation, will have acquired storage capacity and negotiated supply deals with several refiners--i.e., diversified his source of supply to reduce his vulnerability and hence the vulnerability of his customers.

The points listed above are, of course, generalizations and there are refiners and jobbers which do not fit neatly into these two categories. However, from the perspective of the transit property, it is necessary to understand the strengths and weaknesses of the various potential suppliers or diesel fuel even in a general way. This understanding will allow the property to see beyond the bid price and to evaluate potential suppliers in a more comprehensive manner.

## NUMBER OF AWARDS

### Single Award

In addition to deciding on the preferred type or supplier, the transit system needs to decide the number of suppliers it wishes to have. In the past, the normal practice was to negotiate an agreement with a single supplier who would deliver 100 percent of the property's diesel fuel requirement. Having a single supplier has its advantages. First, by offering a single award, the property may encourage more suppliers to compete for the contract knowing that the contract will be worth just that much more. Second, the time and resources spent on negotiations and paperwork is kept to a minimum. Third, monitoring the performance of a single supplier is easier than monitoring the performance of many.

However, there is one obvious disadvantage to having a single supplier, and that is the property is entirely dependent on that supplier. If the supplier cannot perform on a contract for some reason--a fire at his facilities, a labor strike, an international oil crisis, a natural disaster, or just severe weather conditions--,the transit property is left with no source of fuel. At this point, it must make immediate purchases of fuel from other sources at an unknown cost.

Multiple Awards

A transit property can reduce the risk stemming from dependence on a single supplier by making several awards. The effect of problems experienced by a single supplier would be minimized if the transit system can fall back on other suppliers with whom contracts already exist. Having the other suppliers precludes the need to go to the spot market where prices are unpredictable. Yet, multiple awards cannot eliminate all risks entirely because there is no guarantee that the problem affecting one supplier will not affect the others as in the case of a major international energy crisis.

There are drawbacks to having several suppliers. First, there is the increased administrative burden of negotiating and subsequently monitoring several contracts. Second, there is the possibility, particularly in the case of medium and small transit properties, that dividing up the award will result in contacts too small to be attractive to potential suppliers.

In essence, the transit property must decide if the incremental degree of security resulting from multiple awards is worth the added costs in terms or more time spent in negotiations and in monitoring performance of several suppliers, and in terms of the possible disincentive to bidders.

Traditional Supplier

One option available to transit systems pertaining to the supplier is to develop a relationship with a single supplier over several years to the point that the supplier becomes the so-called "traditional" supplier. The term "traditional supplier" took on added meaning in the days of oil controls when allocation regulations froze the buyer/seller relationship by forcing a supplier to sell to whatever customers he had in a particular time period, later referred to as the "base period". Traditional supplier relationships did not, however, begin during controls. In many cases, transit systems operating in smaller cities and towns have found it beneficial to stay with the same supplier year to year. The benefits include preferred customer status in price and service. Such preferential treatment is most important during periods of tight supply. However, even in times of abundant fuel supplies, a discounted price is highly desirable; even though fuel prices may be relatively low, other costs could be rising and, thus, the need to keep fuel cost is as strong as ever.

There are two drawbacks to the traditional supplier option. The first relates to the risks inherent in dependence on a single supplier no matter how reliable he has been in the past. These risks can be reduced though not eliminated by having more than one traditional supplier. The other drawback is that continued use of a single supplier year after year runs counter to the generally held belief that competition breeds the lowest price and best service. Moreover, awards to the same supplier year after year offers the basis for charges or favoritism and, in

the extreme, corrupt management. Because sensitivities are always high when public monies are expended, even the appearance of favoritism can damage the transit system in the eyes of elected officials and the public. An appearance of corrupt or just ineffective management can come back to haunt the property when the next budget increase is sought, requests for fare increases are made, or bond issues are voted on by the public.

It is safe to say that reliance on a traditional supplier is most feasible for transit systems operating in relatively small cities and towns particularly in the Rocky Mountain states where it is not uncommon to find only one or two suppliers servicing a given market area.

SPOT PURCHASES

In 1981, APTA found that about 75 percent of the transit systems surveyed procured their fuel through long term contracts. However, it also revealed that a small percentage of properties relied on purchases in the spot market. A spot market purchase is a one time purchase usually made at a local bulk terminal area otherwise known as the rack. In a spot purchase, the buyer is usually required to move the product from the rack to his own storage tanks. A transit property can use tank trucks it already owns or it can lease tank trucks to offload the product at the rack and move it to garages.

In terms of procurement strategy, spot purchasing of fuel is a means by which the property can acquire additional supply if and when it's needed and in so doing maintain a degree of flexibility. By this it is meant that there is no need for a property to contract for 100 percent of its requirements over the upcoming year. A property might consider locking itself into a contract for the purchase of, say, 75 percent of its projected requirement and go to the spot market for the remaining 25 percent.

There are two major advantages to this type of arrangement. First, the property maintains the ability to acquire a portion of its fuel on its own if prices fall. Because non-contract rack prices are set by supply/demand conditions on any given day, it is possible that the spot price will be lower than the contract price, at least, temporarily. Over time, spot prices will be higher than contract prices because the spot price represents demand for the incremental barrel of oil. However, there are instances in the market when, because of a surge in supply or a relatively sudden drop in demand, spot prices fall below contract prices. A recent example of this phenomenon was seen in the last quarter of 1982 when crude oil spot prices fell to about $28.00 per barrel while OPEC contract prices were still in the $32.00 a barrel range. Oil companies with long term contracts with OPEC countries had to continue paying the higher contract price while other companies took advantage of the lower spot prices. The same kind of situation can occur in local product markets. By planning on making some spot purchases throughout the year, the transit property is positioned to take advantage of favorable price movements.

A second advantage to using the spot market with some degree of regularity is that it allows management personnel the opportunity to develop a working understanding of the oil market. Having this in-house expertise will prove enormously helpful in the event of an oil crisis which results in the contract supplier being unable to deliver the necessary quantity of diesel fuel. The transit property will have the necessary experience and understanding to go into the oil market on its own and compete for available supplies.

Like all other options, this too has potential risks. First, there is no guarantee that spot prices will sink below contract prices during the life of the contract, in which case the property may end up having to pay more than it would have if it had contracted for 100 percent of its needs. Second, going to the spot market to acquire some portion of a property's fuel requirements will necessitate tracking spot prices constantly and administering

the transaction when the purchase is made. The property will have to arrange for the transport of the fuel from the terminal area to its storage tanks. Moreover, it is possible that a storage problem could arise if favorable spot prices make a spot purchase financially beneficial yet the property's storage tanks may not be able to accommodate an additional quantity of fuel. In short, the property would have to allocate administrative resources and work out logistical problems that might arise pursuant to spot acquisitions.

If management determines that the merits of spot purchases outweigh the risks, the decision must then be made concerning the proportionate breakdown between contract and spot purchases. One way to handle this question is to set contract purchases on the basis of previous years' consumption or some minimum case. Any fuel required to handle increased service in the current year or service subsequently required above the projected minimum could be earmarked for spot purchases. As a transit property becomes more familiar with the workings of the oil market, it can increase the percentage of fuel bought in the spot market.

## PRICE RELATED ISSUES AND OPTIONS

### TIMING

An element in procurement strategy often overlooked is timing. The time of year the transit property solicits fuel is usually determined by the property's internal budget and operations schedule. Discussions conducted with transit managers revealed that there is generally no regard given to the state of the fuel oil market at a given time of year relative to any other time of year. That is, transit managers operate as if it makes no difference when the property enters the diesel fuel market. This is not necessarily the case.

Diesel fuel is a middle distillate. The term "middle distillate" is used to describe the hydrocarbons that are found in the so-called middle range of the refinery distillation process. The lighter end of the distillation process consists primarily of gasoline and jet fuel and the heavier end consists mostly of residual fuel oil.

The distillation process does not permit the total elimination of any particular refined product but by making adjustments in the distillation process (i.e., temperature, number of runs through the still, and blending) the refiner can alter the proportions of products distilled from a given barrel of crude oil. Because a large portion of middle distillates has traditionally been used for residential heating purposes the production of middle distillate has traditionally been emphasized by refiners in the autumn and winter months. Conversely, because gasoline used for transportation is in greater demand during the spring and summer months, refiners maximize its production during these months.

The fact that middle distillates are not in as great demand in the spring as they are in the autumn has traditionally offered jobbers an opportunity to buy middle distillate from the refiner at a discounted price if they were willing to take delivery in the spring and summer. This practice was called the "summer fill program". In effect, the jobber was relieving the refiner of the cost of storing the product until the autumn.

Just as the jobber was able to take advantage of the cyclical pattern of distillate demand, so can the transit manager by entering the diesel market in the spring when prices are relatively low. This strategy would attempt to obtain a low base price during the "off" season coupled with a low escalation rate.

Another timing element relates to the length of the contract. Though it is general practice to negotiate a one year contract,

there is nothing sacred about 12 months being the length of a contract. A contract of less than 12 months would probably deter suppliers from going after it because they are accustomed to thinking in terms of 12 month contracts. However, an extended contract of more than 12 months should act as an incentive for suppliers to go after it and, more importantly, to offer a more attractive deal. It may make good economic sense for a transit system to offer an 18 or 24 month contract--if, of course, the bid is sufficiently attractive.

Some transit managers may not want to lock themselves into a fixed multi-year contract, particularly if the diesel supplier is unknown to them. If this is the case, the transit property could offer a 12 month contract with one or two year extensions to be activated at the sole discretion of the transit system. This option presents a very attractive opportunity to the supplier--a probable multi-year contract with a reliable bulk end-user. At the same time, it signals the transit property's intention to closely monitor the supplier's performance, that is, his prices relative to other prices in the local market and his service. If at the end of the base year, the incumbent supplier has proven reliable and is still charging reasonable prices, the second year (i.e., the first option year) can be triggered. The transit system also benefits from this arrangement because it negates the need to begin the procurement process from scratch every 12 months.

## STANDARD PRICING APPROACH - PERCENTAGE ESCALATION

A basic consideration in procurement strategy development relates to the type of pricing mechanism the transit system prefers. As discussed in the introduction, the most widespread practice is for the transit system to request the supplier to submit a base price and then to stipulate the rate at which the price would increase for every cent rise in some posted price. In theory, the rate of escalation ranges from zero in the case

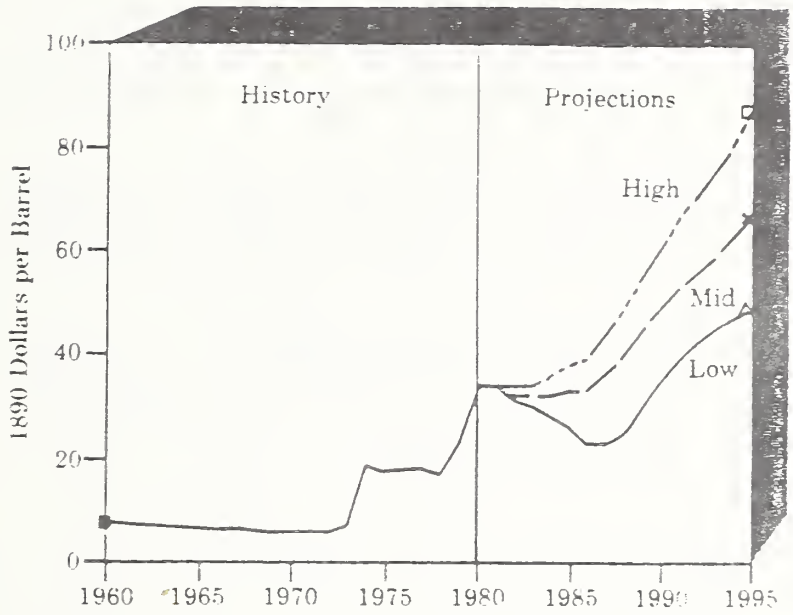
of a fixed price bid to 100 percent which allows the supplier to pass on to the buyer all cost increases on a one to one basis. In practice, escalation rates normally range from about 70 to 95 percent.

The standard escalation clause is based on the assumption that prices will rise during the life of the contract. The supplier must be able to pass on at least some percentage of increased cost which he incurs to protect his gross margin. At the same time, an escalation clause which does not permit the supplier to pass on the full cost increase means that the transit system is spared the full impact of the increase.

On the face of it, the standard escalation clause benefits both the supplier and the transit property. However, there are risks in this arrangement. The current fuel oil market is such that no one can predict with any certainty that prices will go up. In fact, barring political or military conflicts and natural disasters, it is possible that diesel prices will go down. Most price forecasting models do predict a gradual rise in oil prices over the next 12 years. However this long term trend does not preclude the possibility of price decreases for a limited period of time. In fact, crude oil price projections by the Department of Energy shown in Exhibit IV reveal that prices are expected to go down before rising at the end of the decade. In October and November of 1983, the wholesale price of distillate fuel fell in the New York harbor. This price drop caught oil marketers by surprise and caused financial losses to many. For example, a major jobber servicing eastern Pennsylvania and western New York state suffered losses because in the ten days it took to move product from New York harbor up to his marketing areas, prices fell as much as 2 cents a gallon. A normal net profit margin on a gallon of heating oil and diesel fuel is 2 cents.

Exhibit IV

Free World Oil Price Projections




Source: Derived from data and projects in U.S. Department of Energy, Energy Information Administration, 1981 Annual Report to Congress, Volume 3, February 1982.

| Year | Low | Middle | High |
|---|---|---|---|
| 1980 | $34 | $34 | $34 |
| 1981 | 34 | 34 | 34 |
| 1982 | 31 | 32 | 34 |
| 1983 | 30 | 32 | 34 |
| 1984 | 28 | 32 | 36 |
| 1985 | 26 | 33 | 38 |
| 1986 | 23 | 33 | 39 |
| 1987 | 23 | 36 | 44 |
| 1988 | 25 | 40 | 49 |
| 1989 | 30 | 45 | 55 |
| 1990 | 35 | 49 | 60 |
| 1991 | 39 | 53 | 67 |
| 1992 | 42 | 56 | 71 |
| 1993 | 45 | 59 | 76 |
| 1994 | 47 | 63 | 81 |
| 1995 | 49 | 67 | 88 |

Note: All prices for the average delivered cost of crude oil landed in the United States, including transportation costs, stated in 1980 dollars.

Sources: Historical: U.S. Department of Energy, Energy Information Administration, Monthly Energy Review, December 1981, p. 76.
Projections: U.S. Department of Energy, Energy Information Administration, 1981 Annual Report to Congress, Volume 3, February 1982.

In a market where prices are falling, the escalation clause which sheltered the transit system from the full price jump may work to the disadvantage of the transit system by preventing it from realizing the full drop in prices. In this event, the supplier benefits by being able to acquire supply at the new lower price and at the same time charging the transit property a price in between the original base price and the new lower price.

The question then becomes, will the transit manager be open to criticism because they entered into an agreement which did not permit the system to take full advantage of a decrease in prices and, in fact, causes the property to pay above market prices. Transit management may be willing to bear this criticism arguing that it is the price which must be paid in order to protect against sharp price jumps.

PENNY-FOR-PENNY ESCALATION

There is an option to be considered which would preclude the possibility of the system being caught in the position of having to pay above market prices. This option is the penny-for-penny escalation clause. This clause simply permits the supplier to pass on to the transit system both price increases and price decreases in full. Consequently, this option opens the transit property to bearing the full brunt of an increase but allows the property to benefit in full from a price decrease. In assessing the merits of the penny-for-penny escalation option, transit system managers must decide whether they are more interested in protecting against price jumps or in taking full advantage of price decreases. A decision either way will involve risk.

FIXED PRICE BIDS

Another option available to transit managers is the fixed price option. Until recently, it was not feasible for a supplier to submit a fixed price bid. In fact, it was seen as somewhat suicidal. Any supplier offering a fixed price bid was suspected of not understanding how the market worked and was therefore expected to be out of business soon. Federal regulations and many municipalities went so far as to declare fixed price bids as non-responsive to their request for bids.

Recently, however, a technique has been made available to the oil market which allows a supplier to offer a fixed price bid. This technique is called hedging and it involves trading in the energy futures market. Hedging is the act of taking opposite positions in two parallel markets so that no matter what prices do, the hedger will not suffer a financial loss. For example, a supplier which has an obligation to sell diesel fuel to a transit property would enter the futures market and buy No. 2 heating oil futures contracts. (A heating oil futures contract is a legal obligation to buy or sell 1,000 barrels of heating oil in some future month.) If prices go up, the supplier will make a profit in the futures market which will balance out the loss he will incur in the wet barrel market in which he is selling fuel to the transit property. If prices go down, the supplier will suffer a loss in the futures market but this loss will be balanced out by a profit realized in the wet barrel deal with the transit property. In short, by hedging, the supplier is able to offer a fixed price deal to the transit property and, at the same time, lock in his own profit margin.

The key to a successful hedge is that local spot prices must move in tandum with New York Harbor spot prices. For example, if analysis reveals a .5 correlation between New York Harbor spot prices and local spot prices, then for every $.02 change in New York Harbor price, local prices would change by $.01. If this correlation

exists, hedging becomes a viable tool allowing a fixed price bid.

Any party buying or selling the commodity in question can hedge. Thus, the transit system itself could enter the futures market and hedge its diesel fuel purchases. The Southern California Rapid Transit District has been hedging since 1981. Most transit managers, however, would probably want the supplier to do the actual hedging thereby avoiding the administrative burden of monitoring the position in the futures market.

The transit property benefits from the fixed price contract by being able to predict with relative certainty, the amount of money to be budgeted for diesel fuel acquisition over a long term period. The transit property is not vulnerable to any price jump that may occur during the life of the contract.

As with other procurement options however, this arrangement does pose a risk. Whereas a fixed price contract does protect the transit property against the costs of price increases, it prevents the property from taking advantage of a price decrease. The same is true for the supplier which has hedged in the futures market. For hedging is a mechanism for protecting one's financial position by locking in some predetermined profit margin. Hedging is not a mechanism for maximizing profits. Thus, a fixed price arrangement offers both the supplier and transit property the benefit of predictability and protection against adverse price movements. This benefit is obtained at the cost of preventing the supplier from realizing incremental profits, and at the cost of preventing the transit property from realizing incremental savings.

The benefits and risks of hedging diesel fuel purchases in the energy futures market are presented in detail in another report in this series entitled "Hedging Transit Fuel Supplies in the Commodity Futures Market" (UMTA, December 1983).

## PURCHASING COOPERATIVES

As stated earlier, the transportation sector consumes more diesel fuel than any other economic sector. And within the transportation sector, mass transit systems are the greatest single consumers of diesel fuel. The conclusion is thus drawn that transit systems have real or potential market power that enables them to negotiate favorable deals. This is all true. This market power, however, stems from aggregated demand of the transportation sector as a whole. Since it is the single transit property and not the transportation sector than actually buys fuel, this market power in the aggregate may be dispersed to such an extent that it is lost completely. The question then becomes, is it possible to develop a purchasing strategy which consolidates the purchasing power of individual transit systems and takes advantage of this aggregated demand. The answer is yes--that is, there are strategies by which the transit manager can realize the benefits of bulk purchasing.

The merits of bulk purchasing are twofold. First, the greater the total volume purchased, the lower the price per gallon. Second, the greater the volume of diesel fuel purchased, the more important the customer is to the seller and, thus, the more the seller will be inclined to meet the buyer's particular needs. These two benefits do not automatically come with bulk purchasing. It is up to the buyer to negotiate these benefits. The fact that the buyer is interested in bulk purchasing simply allows him to negotiate from a position of economic strength.

The largest transit properties are already in the position to negotiate bulk purchases. The New York City Transit Authority/ MABSTOA, Chicago Transit Authority, Southern California Rapid Transit District, Southeast Pennsylvania Transit Authority-Philadelphia, Washington Metropolitan Area Transit Authority, and other systems serving the major metropolitan areas can and do negotiate bulk purchasing agreements on their own. However,

outside of these first and second tier systems with 1,000 or more buses and between 500 and 999 buses, respectively, there are several hundred transit systems which could benefit from increasing their buying power through bulk purchases.

One method for increasing buying power is the purchasing cooperative. A purchasing cooperative is an arrangement in which several diesel fuel consumers join together for the sole purpose of buying fuel. A transit property need not join with another transit property per se. A transit property can join with any purchaser of diesel fuel. Likely candidates are local public utilities, railroads, and private industrial concerns. The transit management itself must survey the local area to discover if there are potential coop members. Because cooperative members only organize to buy diesel fuel, they need have only two things in common. Coop members should be located in the same general area and all members of the cooperative should want the same fuel with the same physical properties, i.e., specific gravity, viscosity, sulfur content, etc. Actually, it is possible for a cooperative to negotiate for the delivery of various products with differing physical properties; however, the greater the quantity of a single type fuel desired by the coop, the greater the chance is for receiving a lower price per gallon.

As a member of a coop, a transit system does not lose any flexibility in its operations. Each member can arrange its own delivery schedule and payment plan with the supplier or suppliers. The coop is simply a vehicle by which several buyers join to negotiate a lower unit price and favorable terms. The contract resulting from the negotiation need not and should not restrict how each member operates.

The only factor that may be deemed a disadvantage to the cooperative strategy is that it does require the allocation of additional administrative resources--at least at the outset. Management would have to devote additional time to working with other coop members to develop contract requirements, develop the request for proposals, review bids, select one or more suppliers and monitor the contract over time. Of course, these tasks have to be performed even in the absence of a coop and experience has shown the increase in administrative work to be relatively minimal. The transit manager should allow about six months for the establishment of a fuel purchasing cooperative.

PIGGYBACKING

Another bulk purchasing option is called "piggybacking". This option involves the transit property attaching itself to someone else's contract. For example, if the municipality which is being served by the transit property already has a contract in place or is in the process of developing a new contract, the transit system can simply add its requirements, i.e., volume needed, to the municipality's requirement. The transit management does not actively participate in the procurement process except to monitor the effort to insure that its needs are met and its interests are protected. The transit property commits itself to accepting the terms of the contract as negotiated by the municipality. Once the supply agreement is in effect, the transit property becomes just one recipient of the pool of diesel fuel available under the contract.

Piggybacking is not a new approach to fuel procurement. Many medium and smaller cities and towns have attached themselves to contracts negotiated on behalf of the federal government by the Defense Fuel Supply Agency (DFSA). The DFSA is responsible for purchasing fuel to meet all civilian and military requirements of the federal government. This mandate includes purchasing refined products for immediate consumption and crude oil for

storage in the Strategic Petroleum Reserve. As one can imagine, the volumes involved in DFSA contracts are quite large. Consequently, the DFSA is usually able to negotiate a relatively low price per unit. Municipalities and other large consumers of refined products take advantage of the DFSA's buying power by piggybacking on the DFSA contract.

The piggybacking strategy is most attractive to smaller properties because it allows them to enhance their buying power with a minimum of effort. There is no additional administrative burden and, in fact, there should be less administrative chores than if the property were to procure fuel on its own.

The key to a successful piggyback effort is in attaching the transit system to an entity with a good track record of negotiating favorable contracts. Identifying such an entity will necessitate some research on the part of transit management with the first step being the identification of other bulk consumers of petroleum products either in or close to the transit property's service area.

TAKE BULK DELIVERIES AND STORE

Cooperatives and piggyback arrangements are two methods for positioning the transit property to negotiate for the purchase of bulk quantities of fuel benefitting the property with a lower price per gallon because the supplier is dealing in volume. Going one step further involves a strategy to achieve a lower price per gallon by reducing the cost of storage, handling, and transportation on a per unit basis to the supplier. This strategy is bulk deliveries coupled with a high volume storage program. The idea is simply to reduce the number of trips the supplier has to make to deliver fuel to the transit property's garages. A reduced number of trips means less cost to the supplier which can be passed on to the buyer.

Taking bulk deliveries and storing on site also reduces the risk of being caught without fuel in the event of a supply disruption.

The major drawback to the bulk delivery strategy is that it necessitates expenditures of funds on storage facilities--either expanding existing facilities, building new facilities, or leasing facilities. All three options can be very expensive necessitating substantial outlays in a short period of time. The management of fuel storage is addressed in another report in this series and, thus, shall not be re-examined in this report.[3] It should be noted, however, that the additional storage costs resulting from bulk deliveries can be reduced through a cooperative arrangement in which members of a purchasing cooperative jointly pay the costs of storing the fuel.

**SUMMARY**

Summarizing on strategy development is no easy task because strategy development necessarily involves many diverse elements and questions. This examination has addressed the primary factors to be considered in strategy development and related questions as listed below.

Nature of Number of Suppliers

- Who is most likely to give the best deal on supplies and price--refiners or jobbers?
- What type of supplier is most reliable?
- Should one award be made or should multiple awards be made?

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[3]See Transportation Energy Contingency Planning: Emergency Fuel Storage, U.S. Department of Transportation, January 1983, DOT-I-83-19.

Traditional Supplier

- Should a contract be the subject of competition every year?
- Should a transit system stay with a known and reliable supplier year after year?

Supply Security

- How much does enhanced security mean to the transit property?
- How much is the property willing to pay for this enhanced security?
- Do the conditions in the oil market justify expenditures on actions that would reduce the risk of a supply disruption?

Purchasing Cooperatives

- How can a transit system enhance its buying power?
- If transit systems join cooperatives does each member give up independence of action?
- Will the lower unit price justify any administrative burden?

Piggybacking

- Can a transit property enhance its buying power without joining a cooperative?
- What is the easiest and quickest way from an administrative perspective to enter into a favorable supply arrangement?

Take Bulk Deliveries and Store

- Are there ways to reduce the per unit cost of fuel?
- Are there ways to enhance a system's control over fuel availability?

Spot Purchases

- Should a system contract for its full requirement?
- Can some degree of feasibility be maintained and, if so, what is the risk?
- Should a transit property bother to purchase fuel on the spot market?

Standard Pricing Approach

- What are the underlying assumptions behind the standard price escalation arrangement? Are they valid?
- Are there risks in the standard pricing arrangement?

Penny-for-Penny Escalation

- What alternatives are there to the standard pricing arrangement?
- Do the benefits of a penny-for-penny pass through outweigh the risks?

Fixed Price Bid

- Is a fixed price bid feasible?
- What are the risks in a fixed price contract?

Answering these questions does not automatically result in the development of a procurement strategy. However, answering these questions does assist in quantifying, qualifying, and placing in perspective the relative merits and costs of the various options available to the transit manager. Only then can an effective strategy be developed.

The strategy development effort will necessarily involve making trade-offs. For example: a decision to stay with the standard price escalation practice would necessarily be made at the cost of reducing the transit system's ability to benefit in full from any price decrease, and reliance on spot purchases for a large portion of one's fuel makes the transit system more

vulnerable to supply interruptions and price jumps, but it also provides an opportunity to take greater advantage of price decreases.

Decisions on how such trade-offs are to be made will be based on size of the transit system (i.e., fuel consumption), location, demographics, institutional and legal structures, and management perspective. Regardless of what decisions are made, the sheer act of going through the process of evaluating different options will help the transit property to become a more effective actor in the diesel fuel market.

Exhibit V presents the various objectives a transit property might seek in a fuel procurement effort along with the alternative strategy options examined in this document. The exhibit specifies the objectives advanced by each strategy option.

Several points are revealed in the Exhibit. First, there are different ways to achieve the same objective. Some options are complimentary and can be adopted in conjunction with one another to achieve one certain objective. For example, a large transit system could attempt to obtain preferential treatment in deliveries by awarding a contract to a single supplier and continue this relationship year to year, thereby establishing a traditional relationship. The transit property could reduce both cost per gallon and vulnerability by accepting bulk deliveries from the supplier and storing the fuel in leased tankage. Thus, three options have been combined to create a single fuel purchasing strategy. On the other hand, some options which advance the same objective are mutually exclusive, forcing the transit operator to choose one option instead of another. For example, both a percentage escalation-type contract and a fixed price contract will protect the transit property from bearing the full brunt of price increases in the market during the life of the contract. However, the transit property cannot have both types of contract but must choose between the two. Recognizing that the benefits derived from both types of contract in terms of satisfying the

LINKING STRATEGY OPTIONS TO OBJECTIVES

| TRANSIT PROPERTY'S OBJECTIVES | ALTERNATIVE STRATEGY OPTIONS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Contract With Single Supplier | Contract With Many Suppliers | Spot Purchases | Traditional Supplier | Bulk Deliveries And Store | Purchasing Cooperatives | Piggybacking | Percentage Escalation | Penny for Penny Escalation | Fixed Price Bids and Hedging |
| Minimize Risk of Supply Interruption | | ● | | | ● | | | | | |
| Obtain Preferential Treatment in Deliveries | ● [1] | | | ● [1] | | ● [2] | | | | |
| Maximize Flexiblity For Prices and Supply | | | ● | | | | | | | |
| Protect Against Price Increase | | | | | | | | ● | | ● |
| Maximize Benefit of Price Decrease | | | ● | | | | | | ● | |
| Obtain Lowest Unit Price | | | | | ● | ● | ● | | | |
| Predict Fuel Expenditures | | | | | | | | | | ● |
| Minimize Administrative Burden | ● | | | ● | | | ● | | | |

[1] Large transit properties.

[2] Medium and small transit properties.



Exhibit V

objective are relatively equal (in this example, the lower the percentage escalation the closer it is to offering the benefits of a fixed price contract) the decision between the two strategy options will be based on their relative costs in terms of administrative resources, funds, and risks.

The exhibit also reveals conflicting objectives. In this case, the question is not which option to adopt to meet a specific objective (as in the preceding example) but rather which objective is to be satisfied. By deciding on a specific objective, the selection of strategy options is made. For example, the transit manager must decide between seeking to protect the system against rising prices or positioning the system to take full advantage of declining prices. Selection of one objective over the other will necessarily lead to the adoption of certain strategies.

Whatever objectives and strategies are adopted by the transit manager, they will be only as effective as is the contract ultimately negotiated and signed with the supplier.[4] Therefore, the remainder of this report examines issues and options related to the contract.

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[4]The sole exception to this rule is the case where the transit property has opted to buy all its fuel off the spot market thereby precluding the need for a supply contract.

# PART THREE
# SUPPLY CONTRACT OPTIONS

## INTRODUCTION

The contract between the transit property and the supplier is the legal document which specifies the conditions under which the supplier will deliver diesel fuel to the property in return for an agreed upon price per gallon. But a supply contract is more than this. It is also a statement of the priorities of the transit property regarding fuel acquisition and is a reflection of the property's procurement strategy and objectives. The contract is also the instrument which protects the transit property against receiving an inadequate quantity of fuel or receiving fuel of inferior quality and from paying more than is required for the fuel.

Just as there is no risk free fuel procurement strategy, there is also no risk free supply contract. Choices have to be made so that in the end, each party--buyer and seller--believes he is receiving equitable treatment. This may seem obvious; however, when procurement specialists get deeply involved in writing contracts, there is a tendency to perceive all elements of the arrangement solely from the buyer's point of view. This is understandable. The procurement officers' job is to insure that their organization, be it a transit property, a municipality, or a government office, does not violate the public interest by wasting public monies or by failing to obtain the required services. However, an overly strict or one sided contract developed in the name of protecting the public's interest can have unexpected and undesirable effects. Such a contract can reduce the number of suppliers willing to bid on the contract thereby reducing competition. Reduced competition among suppliers lessens the chances that the lowest prices possible under current market conditions will be submitted. Moreover, if suppliers perceive

the contract as a one sided arrangement, they may add a premium to their price thus increasing the cost to the buyer--which is just what the buyer is trying to avoid. A contract must strike an equitable balance between the interests of both the supplier and the transit system. The contract options presented in this section are suggested as ways to achieve this balance. The options to be addressed are:

- Right of Refusal
- Right to Purchase Fuel Outside Contract
- Most Favored Nation or Preferred Customer Clause
- Priority Customer Clause
- Percentage Price Escalation Clause
- Penny-for-Penny Escalation Clause
- Hedge Certification
- Extended Contract
- Multiple Percentage Escalation/De-escalation Clause
- Identification of Price Source
- Inspection Rights

Both the advantages and disadvantages of each option are examined. It must be noted that the alternative contract options examined below are not, for the most part, mutually exclusive. Several of the options are complimentary and could be used simultaneously.

The reader will also note that some of the contract options are the same in nature as several of the strategy options examined in the preceding section. This is necessarily the case because contract clauses reflect the selected strategy the transit property has adopted in its fuel procurement effort.

**RIGHT OF REFUSAL**

In negotiating supply contracts between refiners and marketers within the oil industry, it is common practice among industrial consumers to include a clause which permits the buyer to refuse

delivery on a portion of the quantity specified in the contract. The purpose of the right of refusal clause is to provide the buyer with a way to avoid having to accept fuel he does not need due to lower than expected demand or because he can obtain fuel at a lower cost from another source.

Most contracts extend for at least twelve months. Both the buyer and the seller have a need for predictability over this period. The seller wants to know that he has a customer for his fuel and that his profit margin will be in some defined range. The buyer wants to know that he has a source of fuel and that the cost for this fuel will be in some defined range.

Escalation clauses are included in contracts to reduce the risk to the seller in the event prices rise during the course of the contract. A right of refusal clause should be included in the contract to reduce the risk to the buyer in the event prices decline.

A right of refusal clause specifies that at the sole discretion of the buyer, he, the buyer, may notify the seller of his intent not to take delivery on some regularly scheduled shipment of fuel. The clause usually specifies when the buyer must notify the seller - x number of days prior to delivery. Such a notice should be given in writing. The buyer may specify that he wants a smaller quantity than normal or no shipment at all. Because the volume that can be refused is generally specified in the original contract, the transit operator must keep track of how much fuel he has refused.

If delivery is refused because the operator can get a better price outside the contract, the transit operator takes it upon himself to procure an equivalent volume of fuel at a lower price on the spot market. In actuality, this spot purchase should be arranged prior to serving notice of intent to refuse delivery. Obviously, the operator does not want to be caught having refused

delivery only to find it not possible to obtain the necessary quantity elsewhere at the time it's needed.

Prior to serving notice of intent to refuse delivery, the transit operator must also analyze the costs of taking delivery from an alternative source. That is, just because posted prices of an alternative source are lower than the contract price, it must be remembered that the contract price includes transportation costs, handling charges and insurance. These costs are not included in a rack or terminal price in the spot market. Thus, these charges must be factored in before the final decision to refuse delivery is made.

If the right of refusal clause is to be included in the contract, the transit property must negotiate the percentage of the contract volume to be subject to refusal. The higher the percentage, the greater the flexibility for the property. However, because this clause means additional risk for the supplier, the supplier may be inclined to cover himself by building some premium into his price. This of course would negate to some extent the purpose of the clause.

In summary, the right of refusal clause is one option available for taking advantage of declining prices during the life of a contract. This clause can also be beneficial if for some reason the transit property ended up not needing the full volume for which it had contracted.

**RIGHT TO PURCHASE FUEL OUTSIDE OF CONTRACT**

Complimenting a "right of refusal" clause is a clause which explicitly permits the transit property to purchase fuel outside the contract. This clause denies to the seller any claim of exclusivity on the transit property.

Inclusion of this clause does not necessarily mean that the system will actually buy fuel from a source other than the contract supplier. However, it does permit the property to maintain a degree of flexibility in obtaining any fuel above the quantity specified in the contract if it is ever needed. By maintaining the ability to go to numerous sources to obtain fuel, the transit system enhances its supply security.

**MOST FAVORED NATION CLAUSE OR PREFERRED CUSTOMER CLAUSE**

The term "most favored nation clause"[5] appears out of place in examining fuel procurement by mass transit properties. However, the principle behind the term can benefit transit properties just as it benefits countries in international trade.

The principle underlying the "most favored nation" clause is that a buyer is entitled to the lowest price charged by a seller in a given customer class within a given geographical region. For transit properties, this clause means that a supplier cannot charge a transit property more than he is charging other customers who buy similar volumes and who exist in the same geographic area. The customers need not be similar in nature. For example, a transit property serving a municipality in the midwest should not be charged more than a local agricultural coop which consumes approximately the same volume of fuel in the same region. The key factors are customer class as defined by quantity consumed and proximity to one another. Because this clause assures the buyer that he will always receive the seller's lowest price, the clause is also referred to as the "preferred customer" clause.

The purpose of the "most favored nation" or "preferred customer" clause is to protect the transit property against paying more than any other customer. Its purpose is not to give the property

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[5]The term "most favored nation" is actually a misnomer in that the principle ensures the recipient only the same benefits all other parties are receiving--nothing more and nothing less.

a lower price than other customers.

The most favored nation clause has not been widely used in the refined product retail market.[6] The major impediment has been the difficulty in discovering what other consumers are paying. Oil marketers are not going to publicize voluntarily the contents of their supply contracts for fear a competitor will use this information to its advantage in subsequent competition. It may also not be in the seller's interest to have a customer be able to compare his price to the price being paid by another consumer right down the street.

In the area of municipally owned mass transit systems, supply contracts are usually a matter of public record. Therefore, it would not be difficult to discover the terms of a contract for another property serviced by the same supplier in the same region. However, it would be difficult to discover prices charged to a private customer by a given supplier. The best a transit property could do would be to include this clause in the contract and rely on the supplier to abide by its intent knowing that subsequent discovery of higher prices to the property would be grounds for legal action against the supplier in which a refund would be sought.

It might also be possible to require all companies which bid on a contract to submit prices charged to other customers with or without naming the customers. At least this would insure that the original bid price was no higher than prices charged to other customers at the time the contract was signed.

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[6] Use of the most favored nation clause has been widely used in the natural gas market. The purpose of the clause is to protect a gas purchaser, e.g., a pipeline, against paying a higher price than other pipelines for gas from the same field. The use of this legal instrument was brought on by decontrol of natural gas prices. Prices were expected to gradually decline and no pipeline wanted to be stuck paying an old high price when new deals were being negotiated for gas from the same field at lower prices.

**PRIORITY CUSTOMER CLAUSE**

In the event of an international, national, or regional energy supply disruption, and in the absence of any federal allocation regulations, the supplier will determine how much diesel fuel will continue to be delivered to the transit property. This assumes, of course, that the particular supplier with whom the property has a contract continues to have diesel fuel available for delivery. It is therefore incumbent upon the supplier to have a scheme ready for distributing the quantity of diesel available during a supply disruption.

Under the Uniform Commercial Code, a supplier is required to fulfill his contractual obligation as best he can. However, if conditions over which he has no control arise which prevent the seller from meeting his full obligations, he must allocate the remaining supply among his customers in a "fair and reasonable" way (i.e., on a pro rata basis). This means tnat tne supplier cannot entirely cut off a customer. However, the transit property should not simply rely on the seller's requirement to reduce deliveries on a pro rata basis.

Transit operators should realize that a legal requirement to allocate pro rata is far from an explicit and rigid set of allocation rules. The seller has total discretion as to the basis on wnich he will prorate his supplies. He can prorate on the basis of historic deliveries over some period of time, length of time the seller has been delivering to various customers, current contract amounts, or any other grounds the supplier can think of. By choosing one or another scheme, the seller can favor one set of customers over another to a considerable extent. This flexibility may work in favor of or against the interest of the mass transit system.

To help swing the balance in favor of the transit system, a "priority customer" clause can be included in the contract. The clause would stipulate that because it is in the public's interest to have mass transit systems continue operation unimpeded in an energy emergency, the supplier designates all mass transit systems as "high priority" customers and agrees to satisfy transit requirements to the best of his ability before delivering to other customers. The defense of this clause, if subsequently challenged in court, is strengthened by the declaration that all mass transit systems and not just a particular system are high priority customers. This is because the law tends to view discrimination within a single customer class as unacceptable whereas discrimination among customer classes is more acceptable. For example, it would be difficult for a supplier to justify cutting one transit system by 10 percent and another transit system by 40 percent. If both customers perform the same function they must therefore be of equal importance to their respective clientele. The fact that one system might have 500 buses and the other system has 50 buses is irrelevant before the law.

The exact benefits of being designated a high priority customer have to be negotiated with the supplier. Practically speaking, all the supplier can guarantee is that whatever proration schemes develop in the event of an energy emergency will favor transit systems relative to the other customer classes.

**PRICE ESCALATION CLAUSE**

The primary advantage of a price escalation clause, assuming it's not a 100 percent escalation rate, is that it buffers the transit system from the full impact of price increases. There are basically three types of escalation clauses, each one of which offers unique benefits to the transit property. The first choice is the standard percentage escalation clause which permits the supplier to raise or lower his price to the property on

the basis of a fixed percentage of changes in his costs. Thus, if the clause specifies a 70 percent escalation figure for every penny increase in the supplier's cost, the transit property will pay 0.7¢ more; and for every penny decrease in the cost to the supplier, the transit property will pay 0.7¢ less. This clause allows the transit property to avoid being hit by the full price increase at the cost of not being able to save the full amount resulting from a price decrease.

The second choice is the penny-for-penny escalation clause which stipulates that changes in the costs to the supplier as indicated by a selected posting will be passed on in full to the property. Thus, the property will accrue the maximum savings from a price decrease but at the cost of sustaining the full impact of any price increase.

There is a third choice, not widely found, which can be described as the consumer's attempt to have the best of both worlds. A clause may stipulate one percentage rate to be used during instances of increasing prices and another higher percentage rate to be used during instances of decreasing prices. For example, the clause may permit the supplier to charge the property 0.7¢ more per gallon for every one cent increase in the posted price, but require the supplier to reduce his price to the property 0.9¢ for every one cent decrease in the posted price. In this way, the transit property is still protected from the full brunt of any price jump but can reap more of the savings resulting from price decreases. The reason this type of arrangement is not widely found is because it has been perceived by suppliers--with some justification--as a one-sided arrangement in which the supplier is required to reduce his gross margin in the event of rising prices while not being able to recoup this loss in full, much less extend his margin, in the event of falling prices. In short, the supplier is being put in the position of assuming additional risk.

The fact that transit managers can expect suppliers to be hesitant to enter into an arrangement with multiple escalation and de-escalation percentages should not preclude it from being considered, particularly in an energy market characterized by soft demand. If the other terms of the contract are sufficiently attractive--particularly the volumes involved and the length of the contract--the supplier could be willing to accept such an arrangement. Risk has always been a large part of the oil business and aversion to risk is not a trait found among refined product marketers.

**PUBLISHED PRICE SOURCE SELECTION**

The degree to which a transit property is affected by price trends in the oil market will depend on the published price source used as the indicator of current costs to the supplier. Over the years, the supplier has generally been permitted to use his own price source. The supplier is to track his costs, i.e., the prices he paid at the rack if he is a jobber or the transfer price if he is a refiner. (The transfer price is the price paid by the refiner's marketing department to its refining department when the refined product leaves the refinery and enters the distribution network.) Any increase in cost incurred by the supplier is then passed on to the end-user.

The problem with this arrangement, from the transit system's perspective, is that it allows the supplier to unilaterally determine price changes. The transit system can find itself in the position of having to accept the supplier's increase at face value. If a transit system is being serviced by an independent jobber, it is not difficult to determine the validity of price changes because jobbers acquire fuel through a transaction for which records are readily available. However, for the majority of transit systems who are serviced by refiners, independent confirmation is difficult due to the complex nature of transfer pricing.

One way to avoid having to rely on the supplier to determine price changes is for the transit system to identify a published price source. Several publications provide distillate and motor gasoline prices on a city-by-city basis. The Journal of Commerce and the Oil Price Information Service are recommended for distillate prices. The Platt's Oilgram Price service and, again, the Oil Price Information service are recommended for motor gasoline prices.

Upon determining which published price source to use, the transit management can insert a clause into the contract which pegs any adjustment to the base price on changes in the published source. The adjustment can be on a penny-for-penny basis or on some mutually agreeable rate.

Selection of a published price source offers the transit system another benefit besides greater control over price changes. It encourages the supplier to keep his own costs down to avoid being caught incurring an added cost while not being able to pass it on to the end-user because this added cost was not industry wide and was therefore not reflected in the specified posted price. Thus, a refiner would be encouraged to buy low priced oil and a jobber would be encouraged to buy low priced product. For example, if a jobber had been buying product off the rack in Chicago, Illinois, in the third week of August 1983, he would have seen a spread of 5.4 cents a gallon for No. 2 fuel. The high was 88.65 cents offered by Sunoco and the low was 83.25 cents offered by Tosco.[7] A supplier with the ability to track his own costs would have had no incentive to buy the lower priced

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[7]Economic theory tells us that at any given time, in a particular market, there is one "market price" determined by supply/demand. Thus there should be one price for No. 1 diesel fuel or one price for gasoline in Chicago on any given day. Yet, we know this not to be true. And it is not true because price reflects not only supply and demand but the seller's costs, i.e., acquisition costs, storage costs, handling costs, insurance, and transportation costs. It must also be recognized that discounts are regularly given by refiners to resellers at the rack. These discounts are not captured in any published price source.

product from Tosco. On the other hand, a supplier whose contract price was pegged to a specific published price source would have had an incentive to buy from Tosco if the higher price had not matched the published price posting selected by the transit system.

## HEDGE CERTIFICATION

In the event that a diesel fuel marketer offers a fixed price contract, it is necessary for the transit system to insure that the dealer did not inflate his price as protection against a subsequent increase in prices. Moreover, it is not in the interest of the transit property for its supplier to risk severe financial loss thus jeopardizing his ability to stay in business and continue supplying the transit property. The risk of financial loss inherent in a fixed price bid can only be reduced through a hedge in the futures market. The only way to insure that a supplier is not charging a premium to protect his margin in the event that prices rise is to require that he hedge his position in the wet barrel market with an offsetting position in the futures market.

It is, therefore, prudent for the transit manager to include a clause requiring that any company submitting a fixed price bid be prepared to certify that it has hedged or, upon being awarded the contract, will hedge its future deliveries of diesel fuel in the energy futures market. This certification should at a minimum require the supplier to specify:

- The delivery months of the futures contracts (this is to insure that the hedge will last for the life of the contract),
- The name of the broker handling the trade for the supplier (this would permit the transit property to verify the hedge position), and
- The percentage of financial risk being hedged in the

futures market (this will permit the transit manager to know how exposed the supplier is to adverse price movements).[8]

It may be in the interest of the transit property to specity a minimum percentage of financial risk; that is, percent of fuel deliveries, that must be hedged throughout the life of the contract.

**VENDOR QUALIFICATION CLAUSE**

It is in the interest of the transit property to insure that all diesel suppliers with whom contracts are signed are legitimate, established refined products marketers. In fact, it is in the interest of the property to insure that questionable firms do not muddy the procurement process by even bidding on a contract.

There have been numerous instances of properties making awards solely on the basis of the low bid only to discover subsequently that the quoted price which had appeared to be too good to be true was exactly that. The price was so low that the supplier could not deliver at the bid price and remain in business. Thus, properties have found themselves with a contract and no supplier.

There are also instances of awards being made to organizations which on paper appeared to be well established firms but later were found to be "instant" oil companies organized for the sole purpose of bidding on a specific contract. The problem with "instant" oil companies is that there is a high probability that the logistics of buying and moving the product from the refinery

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[8]Typically, a company will place a hedge to cover less than a hundred percent of the volume being covered in the wet barrel market. For example, if a supplier is committed to supplying 200,000 gallons of diesel fuel a month (i.e., 4,762 barrels) he may take a position in the futures market to cover, say, 126,000 gallons or 63 percent. The hedger determines how much of his wet barrel market position is to be hedged on the basis of his net risk position. Net risk is essentially inventory plus purchase agreements less undelivered sales commitments.

or the terminal to the property's garage are not established. Additionally, there is no guarantee that the parties who joined together to create the "instant" oil company will stay together. There is also a high probability that the bid price was based on conjecture and overly optimistic (from the seller's perspective) market expectations. And finally, there is the common sense question of why should a transit property entrust its fuel supply to an entity with no track record when there are so many oil product marketers with years of proven experience.

To insure that only legitimate and established oil product marketers respond to solicitations and ultimately receive awards, the transit property can make some requirements of suppliers. In soliciting for bids, the transit property may require one or more of the following:

- Present and past customers--names of the organizations, names and telephone numbers of procurement officers, and the period of time each customer was supplied.
- Prices charged to other customers within the last 18 months as documented by invoices.
- Credit references--commercial banks, savings and loans, etc.
- Transportation and storage information, e.g., proof of access to pipeline or barge; throughput agreement documentation with terminal owners'; proof of storage capacity ownership.

As for the contract, a vendor qualification clause should be included. This clause should stipulate that the contract becomes null and void if any of the information of the kind specified above submitted in the bid is found to be false or misleading. In addition, a performance bond could be required which, of course, would be forfeited if the supplier were to default on the contract.

## RIGHT TO INSPECT FUEL

Though fuel quality has not been found to be a problem by transit operators, there is always the risk of receiving fuel of a lesser quality than specified in the contract. Key properties in diesel fuel are sulfur content, water and sediment content, carbon residue, ash weight, flash point, and viscosity. The required specifications as determined by the American Society For Testing Materials are presented in Exhibit VI.

To reduce the risk of receiving poor quality fuel, the transit property should include a clause wnich permits the property to inspect the fuel at any time. Actual inspection would be undertaken by outside laboratories. Any deviations placing the quality below par value would result in some sort of rebate or other financial compensation made to the transit property.

It should be noted that fuel should be tested before it has been deposited into the tanks of the transit property. The supplier cannot be held responsible for any contamination after it has left his facilities. Testing need not be done on a regular basis. Intermittent testing is sufficient to encourage the supplier to maintain quality levels. The transit system should expect to pay $75 to $100 per test.

**Detailed Requirements for Diesel Fuel Oils[A,B]**

| Grade of Diesel Fuel Oil | Flash Point, °C | Cloud Point °C (°F) | Water and Sediment, vol % | Carbon Residue on, 10 % Residuum, % | Ash, weight % | Distillation Temperatures, °C (°F) | | Viscosity | | | | Sulfur,[D] weight % | Copper Strip Corrosion | Cetane Number[E] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 90 % Point | | Kinematic, cSt[G] at 40°C | | Saybolt, SUS at 100°F | | | | |
| | Min | Max | Max | Max | Max | Min | Max | Min | Max | Min | Max | Max | Max | Min |
| No. 1-D A volatile distillate fuel oil for engines in service requiring frequent speed and load changes | 38 (100) | [B] | 0.05 | 0.15 | 0.01 | ... | 288 (550) | 1.3 | 2.4 | ... | 34.4 | 0.50 | No. 3 | 40[F] |
| No. 2-D A distillate fuel oil of lower volatility for engines in industrial and heavy mobile service. | 52 (125) | [B] | 0.05 | 0.35 | 0.01 | 282[C] (540) | 338 (640) | 1.9 | 4.1 | 32.6 | 40.1 | 0.50 | No. 3 | 40[F] |
| No. 4-D A fuel oil for low and medium speed engines. | 55 (130) | [B] | 0.50 | ... | 0.10 | ... | ... | 5.5 | 24.0 | 45.0 | 125.0 | 2.0 | ... | 30[F] |

[A] To meet special operating conditions, modifications of individual limiting requirements may be agreed upon between purchaser, seller, and manufacturer.

[B] It is unrealistic to specify low-temperature properties that will ensure satisfactory operation on a broad basis. Satisfactory operation should be achieved in most cases if the cloud point (or wax appearance point) is specified at 6°C above the tenth percentile minimum ambient temperature for the area in which the fuel will be used. The tenth percentile minimum ambient temperatures for the U.S. are shown in Appendix X2. This guidance is of a general nature, some equipment designs, use flow improver additives, fuel properties, and/or operations may allow higher or require lower cloud point fuels. Appropriate low temperature operability properties should be agreed on between the fuel supplier and purchaser for the intended use and expected ambient temperatures.

[C] When cloud point less than −12°C (10°F) is specified, the minimum viscosity shall be 1.7 cSt (or mm²/s) and the 90 % point shall be waived.

[D] In countries outside the U.S.A., other sulfur limits may apply.

[E] Where cetane number by Method D 613 is not available, ASTM Method D 976, Calculated Cetane Index of Distillate Fuels[7] may be used as an approximation. Where there is disagreement, method D 613 shall be the referee method.

[F] Low-atmospheric temperatures as well as engine operation at high altitudes may require use of fuels with higher cetane ratings.

[G] 1 cSt = 1 mm²/s.

[H] The values stated in SI units are to be regarded as the standard. The values in U.S. customary units are for information only.

## SUMMARY

None of the contract options put forth for consideration is radical in nature. Moreover, none of the options put forth is overly burdensome or unfair to the supplier or would, therefore, keep suppliers from competing for a transit system's business. At the same time, each option offers benefits to the transit system in terms of supply flexibility and/or price protection. The decision to include one or more of the clauses should be made in the recognition that the contract to purchase diesel fuel should reflect both the objectives and priorities of the transit system as well as the current realities of the petroleum market. The contract should not be a reflection of the marketing goals of the diesel fuel supplier.

Exhibit VII presents a set of objectives--the same objectives identified in the strategy section of this document--and matches these objectives to the pertinent contract options. The purpose is to indicate which contract options should be considered given the various strategy options.

The Exhibit reveals that several of the contract options should be considered under a variety of strategies, whereas a few of the contract options pertain only to certain strategy options. For example, all the contract options should be considered regardless of whether the property is going to award a single contract or several. However, if the property is going to rely predominantly or entirely on spot purchases, the only clause of any significance is the inspection clause.

LINKING CONTRACT OPTIONS TO STRATEGY OPTIONS

| CONTRACT OPTIONS | ALTERNATE STRATEGY OPTIONS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Contract With Single Supplier | Contract With Several Suppliers | Spot Purchases | Traditional Supplier | Bulk Deliveries and Store | Purchasing Cooperatives | Piggybacking | Percentage Escalation | Penny for Penny Escalation | Fixed Price Bids and Hedging |
| Right of Refusal | ● | ● | | ● | | ● | ● | | | |
| Right to Purchase Fuel Outside Contract | ● | ● | | ● | | ● | ● | | | |
| Preferred Customer Clause (Price) | ● | ● | | ● | | ● | ● | | | |
| Priority Customer Clause (Deliveries) | ● | ● | | ● | ● | ● | ● | | | |
| Percentage Price Escalation Clause | ● | ● | | ● | | ● | ● | ● | | |
| Penny for Penny Escalation Clause | ● | ● | | ● | | ● | ● | | ● | |
| Multiple Escalation/ De-Escalation Clause | ● | ● | | ● | | ● | ● | ● | | |
| Identification of Price Source | ● | ● | | ● | | ● | ● | | | |
| Hedge Certification | | | | | | | | | | ● |
| Extended Contract | ● | ● | | ● | | ● | ● | | | |
| Right to Inspect Fuel | ● | ● | ● | ● | ● | ● | ● | | | |

Exhibit VII

It must be recognized that this chart matches strategies and pertinent contract options. Obviously not all the contract options can be included in a single contract due to their mutual exclusivity. For example, if a property is to award contracts to several suppliers, the contract would contain either a percentage escalation clause or a penny-for-penny escalation clause or the multiple escalation/de-escalation. The specific clause to be included would be determined by the objective sought by the property.

## CONCLUSION

This report has attempted to identify and examine the many factors involved in the procurement of diesel fuel by mass transit bus systems. Yet, more than looking at the individual pieces of fuel procurement, this report has encouraged transit managers, particularly of medium and small systems, to assemble these pieces into a comprehensive fuel procurement program. Development of a formal fuel procurement plan will benefit transit management in several ways. Development of a fuel procurement plan will:

- cause operators to examine or re-examine the tenets on which their fuel procurement effort has historically been based;
- force operators to ask questions concerning the efficiency and effectiveness of internal procurement regulations and procedures;
- encourage examination of alternative approaches to satisfying the need for diesel fuel at a reasonable cost;
- lead to the making of explicit decisions and projections which can later be examined and modified, if necessary, to meet changing conditions; and
- institutionalize an understanding of the diesel fuel market.

Most importantly, development of a formal diesel fuel procurement plan will increase the likelihood that the transit property will get the most fuel for the dollar.

Exactly what goes into the procurement plan can best be decided by the managers of the specific system. Only they can determine which strategies and which contract options best suits the needs of the system given the property's size, location, growth projection, laws and regulations, local diesel market conditions and management perspective. To assist local operators in their fuel procurement planning, this report has been written.



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